

TWO NEW SPECIES OF *SISYRINCHIUM* SUBG. *ECHTHRONEMA*  
(IRIDACEAE) FROM NUEVO LEON, MEXICO

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ABSTRACT

Two new species of *Sisyrinchium* subg. *Echthronema* are described from Nuevo León, México. *Sisyrinchium hintoniorum* is a high elevation endemic most closely related to the more widespread *S. schaffneri*; *S. microbracteatum* apparently is restricted to gypsum outcrops and is most similar to *S. tenuifolium*.

KEY WORDS: *Sisyrinchium*, Iridaceae, México

Two remarkably distinct species of *Sisyrinchium* have been brought to attention in recent collections by the Hinton family from the state of Nuevo León in northeastern México. Flowers of both species are yellow and produce spreading, free staminal filaments, marking them as members of subg. *Echthronema* (Herbert) Goldblatt. Recent publications regarding the taxonomy of Mexican and Central American *Sisyrinchium* were summarized by Nesom & Hernández (1992) in the introduction to the description of a new species of subg. *Sisyrinchium* from Nuevo León.

*Sisyrinchium hintoniorum* Nesom, *sp. nov.* TYPE: MEXICO. Nuevo León, Mpio. Zaragoza, Cerro El Viejo, pine woods, 3125 m, 10 May 1992 [flowering], Hinton *et al.* 22440 (HOLOTYPE: TEX!).

*Sisyrinchio schaffneri* S. Wats. similis sed differt floribus numerosioribus, corollis multo majoribus, bracteis spathae longioribus, et seminibus majoribus sine depressione distincta.

Perennials from a short (5-10 mm), densely fibrous-rooted rhizome or caudex, the roots slightly thickened but not distinctly swollen, herbage glabrous. Stems 4-5 per plant, erect, 28-45 cm tall, flattened and 2-winged, 1.5-2.0 mm

wide, unbranched, bearing a single spathe at the apex. Leaves linear, linear-lanceolate apically, 1.5-4.0 mm wide, 2.5-3.5 cm long. Spathes solitary, 6-8-flowered, compressed, narrowly lanceolate-elliptic in outline, 3-4 mm wide, the spathe bracts subequal to unequal in length, the outer 44-55 mm long and 35-50% longer than the inner, the inner 30-35 mm long, the outer with basally connate margins 4-9 mm above the base. Tepals yellow, broadly ovate-lanceolate, 18-20 mm long; filaments united ca. 1.5 mm, free ca. 4 mm; anthers 5 mm long; ovaries obpyriform, glabrous. Capsules obovate-oblong in outline, 7-9 mm long, 4-5 mm wide, apically truncate, 3-angled, the surface often distinctly shiny; pedicels strongly nodding in fruit, ca. 20 mm long. Seeds black, distinctly foveolate, 1.5-2.0 mm in diameter, spheroid to slightly angular, without a distinct depression or the depression very shallow and ca. 1/3 of seed width.

Additional collection examined: MEXICO. Nuevo León: Mpio. Aramberri, Cerro El Viejo, dense "ayarin" forest, 3225 m, 20 Nov 1993 [fruiting only], Hinton *et al.* 23975 (TEX).

Within subg. *Echthronema*, the new species is similar and clearly closely related to three other species primarily centered in northern México: (1) *Sisyrinchium schaffneri* S. Wats., known from Arizona, Chihuahua, Coahuila, Nuevo León, Tamaulipas, San Luis Potosí (the type), Edo. México, Puebla, Michoacán, Jalisco, and Aguascalientes; (2) *S. cernuum* (Bickn.) Kearney, known from Arizona, Texas, Chihuahua, Coahuila, Nuevo León, Tamaulipas, Veracruz, Hidalgo, Querétaro, Puebla, Edo. México, Guanajuato, Aguascalientes, Jalisco, Sinaloa, and Durango; and (3) *S. longipes* (Bickn.) Kearney & Peebles, known from Arizona, Sonora, and Chihuahua. Each of these species produces unbranched stems with a single terminal spathe, spathe bracts of subequal to unequal length, and distinctly unthickened fibrous roots. These species can be distinguished by the contrasts in the following key.

1. Pedicels erect or ascending; tepals 8-12 mm long. .... *S. longipes*
1. Pedicels distinctly arcuate-nodding; tepals 3-5, 10-13, or 18-20 mm long.  
..... (2)
  2. Tepals 3-5 mm long. .... *S. cernuum*
  2. Tepals 10-20 mm long. .... (3)
3. Tepals 10-13 mm long; flowers 2-4(-6) per spathe, the longer spathe bract 22-30(-35) mm long, shorter bract 20-26 mm long; seeds 1.2-1.5 mm wide, depressed-spherical, with a deep and sharply defined depression ca. 2/3 the seed width. .... *S. schaffneri*
3. Tepals 18-20 mm long; flowers 6-8 per spathe, the longer spathe bract 44-55 mm long, shorter bract 30-35 mm long; seeds 1.5-2.0 mm wide, rounded

to somewhat angular, without a distinct depression or the depression 1/3 the seed width and very shallow. .... *S. hintoniorum*

Of these, only *Sisyrinchium hintoniorum* and *S. schaffneri* occur in Nuevo León. The latter occurs at 1550-2380 meters on Cerro Viejo, apparently not reaching the high elevation of that mountain where *S. hintoniorum* grows, but it seems clear that *S. hintoniorum* cannot be considered merely a large, ecological variant of *S. schaffneri*. *Sisyrinchium schaffneri* is found at and near the top of two other high peaks in the area, Peña Nevada and Cerro Potosí, each of which is near 3300 meters.

***Sisyrinchium microbracteatum*** Nesom, *sp. nov.* TYPE: MEXICO. Nuevo León, Mpio. Aramberri, Aramberri to El Salitre, gypsum hillside, 1325 m, 26 Oct 1993, *Hinton et al.* 23737 (HOLOTYPE: TEX!; Isotypes: CAS!, ENCB, GH!, MEXU!, NY!, US!).

*Sisyrinchio tenuifolio* Willd. similis sed differt caulibus elatioribus, bracteis spathae libris ad basim, bracteis pusillis ad nodos ac internodos superos, ovariis glabris, et capsulis minoribus laevibus.

Perennials without an evident caudex, with a fascicle of fleshy-thickened fibrous roots ca. 4-8 cm long, 2-4 mm wide, tapered slightly at the tips; herbage glabrous. Stems mostly 1-3 per plant, wiry-thin, terete, erect, 25-40 cm tall, (2-)3-5 branched in the upper half, each branch node with a folded bract (similar to outer spathe bract) 5-15 mm long, diminishing in size upward, a small peduncular bract commonly present 10-35 mm immediately below the spathe. Leaves linear, not folded basally, 1.0-2.5 mm wide, the basal 15-30 cm long, leaving a mass of persistent, fibrous bases mostly 2-4 cm long, cauline leaves shorter and 1-3 in number. Spathes solitary, 4-9-flowered, slightly compressed, elliptic to elliptic-lanceolate in outline, 2-4 mm wide, the spathe bracts equal, 10-14 mm long, or the outer 1/2-2/3 the length of the inner, the margins usually free to the very base but sometimes connate 0.3-0.6 mm, brownish-green, often purplish along the edges, the inner bract with distinctly hyaline margins. Tepals yellow, broadly obovate-ob lanceolate, 9-12 mm long; filaments and style united into a column 1.0-1.5 mm long, the filaments spreading and free 2.0-2.5 mm, style branches 2.0-2.5 mm long, anthers ca. 2 mm long, strongly curved; ovaries spherical, glabrous. Capsules (mature) slightly oblong in outline, 3.5-5.5 mm long, 2.5-3.5 mm wide; pedicels erect, extending 0-4 mm above the spathe apex. Seeds black, very shallowly foveolate-reticulate, ca. 1 mm in diameter, spheroid, slightly depressed, with a deep, distinctly margined depression ca. 2/3 the width of the seed.

Additional collections examined: MEXICO. Nuevo León: Mpio. Galeana, near Río de San José, oak and pine woods, 1720 m, 2 Oct 1991, *Hinton et al.* 21570 (TEX); Mpio. Zaragoza, near Zaragoza, gypsum hillside, 1365 m, 28 Jul 1993, *Hinton et al.* 29104 (TEX); Mpio. Zaragoza, Cerro Viejo, gypsum hillside, 1350 m, 23 Sep 1993, *Hinton et al.* 29515 (TEX); Mpio. Aramberri, Aramberri to El Salitre, gypsum hillside, 1325 m, 26 Oct 1993, *Hinton et al.* 29786 (TEX).

Within *Sisyrinchium* subg. *Echthronema*, *S. microbracteatum* is similar and apparently most closely related to *S. tenuifolium* Willd., a widespread species in México. Both species produce branched, wingless, nearly terete stems, narrow leaves, a fascicle of fleshy-thickened fibrous roots, subequal spathe bracts, and at least some forms of *S. tenuifolium* have persistent, fibrous leaf bases. The new species differs from *S. tenuifolium* in its generally taller stems (vs. stems mostly 15-25 cm high), spathe bracts free to the base (vs. margins connate to 1.5-3.0 mm above the base), numerous small bracts at the branch nodes and on the peduncles (vs. lanceolate nodal bracts, without peduncular bracts), glabrous ovaries (vs. pubescent), and smaller, smooth-walled capsules (vs. mostly 6-9 mm long, with warty-roughened walls). *Sisyrinchium microbracteatum* is restricted to gypsum outcrops in central and south-central Nuevo León; *S. tenuifolium* apparently is much less common but has been collected in the same area.

Over almost all of its range, *Sisyrinchium tenuifolium* produces pubescent ovaries that mature into capsules with the surfaces conspicuously roughened by persistent, expanded trichome bases. Some plants of *S. tenuifolium* in Nuevo León and Coahuila are typical of the species in this respect, but in both states, other plants have glabrous ovaries and smooth fruits. In a population sampled from central Coahuila (*Wendt 1842* [ASU,TEX]), some plants have glabrous ovaries, others pubescent, but other differences among these plants are not apparent. Other accepted Mexican species very closely related to *S. tenuifolium*, however, are consistently separable from it with the emphasis of glabrous ovaries (e.g., *S. tolucense* Peyr., *S. palmeri* Greenm., *S. conzattii* Cald. & Rzed. - see Calderón 1988; McVaugh 1989), and when more specimens are at hand, the "*S. tenuifolium* complex" in northern México should be reexamined.

With the addition of the two new species described here, a total of six species of *Sisyrinchium* subg. *Echthronema* are presently known from the northeastern Mexican states of Coahuila, Nuevo León, and Tamaulipas:

*Sisyrinchium microbracteatum* and *S. hintoniorum* (Nuevo León),

*Sisyrinchium arizonicum* Rothr. (rare in Coahuila and Nuevo León),

*Sisyrinchium convolutum* Nocca (rare in Coahuila and Nuevo León).

*Sisyrinchium tenuifolium* Willd. (scattered in Coahuila and Nuevo León), and

*Sisyrinchium schaffneri* S. Wats. (common in Coahuila and Nuevo León, rare in Tamaulipas).

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